REPORT OF THE PLANNING SUB-GROUP ON COTTON TEXTILES

DIRECTORATE OF COMMERCIAL PUBLICITY, MINISTRY
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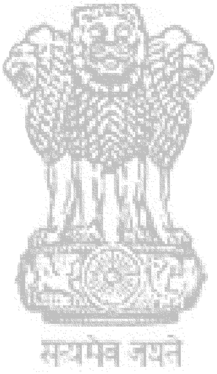

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CHAPTER I

INTRODUCTORY

The Planning Commission set up a Planning Group on Textile ~~Fibres~~ under the chairmanship of Shri D. S. Joshi, Secretary, Ministry of Commerce, to make a critical review of the progress of the programmes of the textile industry in the Third Plan period and to formulate proposals in the Fourth Plan in the perspective. With a view to making a detailed study of the problems of each of the branches of the textile industry, the Planning Group, at its last meeting held on 27th September, 1963, set up a number of sub-groups, including a Sub-Group on Cotton Textiles under the chairmanship of Shri R. Doraiswamy, Textile Commissioner. The personnel of the Sub-Group on Cotton Textiles are :

1. Shri R. Doraiswamy, Textile Commissioner.	Chairman
2. Shri K. Srinivasan, Director, South India Textile Research Association, Coimbatore.	Member
3. Shri B. G. Kakatkar, Secretary-General. Indian Cotton Mills' Federation, Elysium Mansion, Colaba Causeway, Bombay-5.	Member
4. Shri Purshottam D. Singhania, J.K. Organisation, Kamla Tower, Kanpur.	Member
5. Dr. S. M. Sikka, Additional Agircultural Commissioner, Ministry of Food & Agriculture, Krishi Bhavan, New Delhi.	Member
6. Dr. D. K. Ghosh, Director, Planning Commission, Yojana Bhavan, Parliament Street, New Delhi.	Member
7. Dr. A. Vaidyanathan, Assistant Chief, Perspective Planning Division of the Planning Commission, Yojana Bhavan, Parliament Street, New Delhi.	Member
8. Shri T. V. Sundararajan, Dy. Director, Textile Commissioner's Office, Bombay.	Secretary

Terms of Reference

2. The major terms of reference to the Planning Group on Textile Fibres, as spelt out by the Planning Commission, are:

(a) to make a critical review of the progress of the programmes of the textile industry in the Third Plan period;

(b) to assess in the light of current trends and available data the position likely to be reached at the end of the Third Plan period; and

(c) to formulate proposals for the Fourth Plan in the perspective, wherever possible, of a 15-year period, 1966-81.

The Planning Group has also been advised to pay special attention in preparing a phased programme so that the problem of "bunching" resulting from unsatisfactory phasing of projects is avoided. The Planning Commission have also indicated the lines of studies to be made in respect of the several textile fibres so that the final study made by the Group would be sufficiently comprehensive to enable action being initiated for the realisation of the Fourth Plan programme. In view of the general terms of reference to the Planning Group, we thought it advisable to keep to these terms of reference and make appropriate studies and recommendations.

CHAPTER II

THIRD PLAN TARGETS

2.1. The Third Plan provides for a target of cotton cloth production of 9,300 million yards (8,504 million metres), including 150 million yards for Khadi (137 million metres). The sector-wise break-up of this target and the actual production at the commencement of the Third Plan are:

(figures in million)

	Third Plan Target		Second Plan Achievement	
	Yards	Metres	Yards	Metres
(*i*) Mill Cloth	5,800	5,304	5,083	4,648
(*ii*) Handloom & Powerloom cloth	3,350	3,063	2,288	2,092

2.2 The per capita availability of cotton cloth at the commencement of the Third Plan was 15.4 yards (14.1 metres) and was envisaged to go up to 17.4 yards (15.9 metres) at the end of the Third Plan.

2.3. Mill yarn required for weaving of cloth to the extent targeted—both by the textile mills and the decentralised sector of handlooms, powerlooms and for hosiery and others—has been estimated at 2,250 million lbs. (1,021 million kgs) and the target for indigenous cotton crop has been placed at 70 lakh bales.

CHAPTER III

THIRD PLAN PROGRESS

Spindles

3.1.1. The installed capacity of the industry at the end of the Second Plan (the 1st January, 1961) was 13.66 million spindles and was proposed to be increased by four million spindles during the Third Plan period. Of the proposed addition of four million spindles, three million spindles were initially earmarked for licensing. It was also decided that the capacity covered by registrations/licences issued previously but which were revoked during the current Plan period might be relicensed. This capacity came to 0.43 million. The total capacity thus made available for initial licensing was 3.43 million spindles (actual 3.44 million spindles). Against this capacity, licensing was actually made in respect of 3.70 million spindles by the end of 1963.

On an examination of the time of issue of licences, it is observed that bulk of the licences were issued during the period January 62—June 1963. For one reason or another, the rate of installation had been very tardy. Concerted efforts both by the Government and the industry are thus called for to accelerate the rate of installation of spindles. Possibly, judged from the current pace of installation, availability of indigenous machinery, foreign exchange and Govt. policy for the import of textile machinery, the period required for erection of the capacity and the present position regarding the availability of cement, steel and other building materials, we might perhaps expect 1.5 million spindles being installed before the close of the Third Plan. Even the installation of this 1.5 million spindles might require bringing in of ring frames and cards, which today are not permitted to be imported.

3.1.2. Keeping in view, the targeted additional installation of four million spindles, it would be advisable to initiate action in furtherance of an installation of at least 2.5 million spindles during the Third Plan period. Action necessary to fulfil this time and capacity target schedule might possibly take the following shape:

(i) Issuance of industrial licences to cover one million spindles more which have been kept in reserve; and

(ii) Issuance of industrial licences to cover the anticipated infructuousness of licences issued so far.

Based on the experience of the Second Plan period, 25% of the licensed capacity might prove infructuous. This would mean that of the 3.70 million spindles so far licensed, the extent of infructuousness might be of 0.92 million spindles. In fact, having regard to the largeness of the expansion envisaged during the Third Plan, we will not be unjustified in assuming even a larger percentage of infructuous licensing.

3.1.3. Government have now decided that every existing Composite/spinning mill may increase its spindleage to the extent of 7½% of its licensed spindleage. There may be cases of imbalance between the expanded spindleage and the total preparatory capacity after installing minimum number of preparatory machines required to feed the above 7½% spindles. Mills may in such cases install further spindles up to an overall limit of an increase of 10% of the present licensed spindleage in order to achieve balanced and economic working. This decision has already been communicated to the industry. The mills have also been advised to ensure that necessary steps connected with this new installation are completed before the 31st December, 1964. All possible assistance has been assured by the Government to facilitate expeditious installation of spindles.

3.1.4. The proposed additional licensing envisaged above might not prove excessive since not all the units in the industry are likely to ask for additional installation. At any rate, the installation of new spindles would be kept under continuous watch and should the growth of spindles prove to be excessive in relation to the Third Plan target steps could be taken in time to adjust the excess capacity against the Fourth Plan target.

Availability of Machinery

3.1.5. At present, for setting up of new spinning mills and for substantial expansion of existing units, all spinning machinery except cards and ring frames are allowed to be imported on the basis of foreign exchange resources available from time to time. There is a ban on the import of ring frames and cards and all requirements of these items of machinery whether meant for expansion or for rehabilitation have to be met out of indigenous production. The extent of availability of ring frames, cards and other spinning machinery in the light of the requirements thereof for expansion and rehabilitation is examined below:

During the remaining period of the Third Plan, the average annual requirement of cards and ring frames for

(i) new mills and substantial expansion for which licences to the extent of 3.7 million spindles have been issued.

(ii) 7.5% expansion of the spindleage in the existing mills; and

(iii) rehabilitation of the existing equipment of the industry would be:

Total demand for spinning machinery
during the next 2½ years

Name of machine	For replacement	For new installation /substantial expansion and for 7½% "marginal" expansion (Total expected installation—2·5 million)	Total demand
Blow Room Line	100	140	250
Card	2,362	8,333	10,695
Comber set	30	169	199
Draw frame set	262	442	704
Speed frame	788	887	1,675
Ring frame	3,562	6,250	9,812
(lakh spls.)	(14·25)	(25·0)	(39·25)

As against the above anticipated demand, the picture of

- (i) current annual rate of indigenous production;
- (ii) average annual targetted rate of indigenous production; and
- (iii) anticipated shortfall in supply based on the current rate and targetted rate of production of cards and ring frames presents the following:

Total demand, production and shortfall of spinning machinery during the next 2½ years

Name of machinery	Total demand both for expansion & replacement	Expected indigenous production	Shortfall
Blow Room Line	250	42	208
Card	10,695	4,764	5,931
Comber set	199	—	199
Draw frame set	704	163	541
Speed frame	1,675	230	1,445
Ring Frame	9,812	5,461	4,351
(lakh spls).	(39·25)	(21·84)	(17·41)

The demand for cards would be somewhat less if high production cards are manufactured within the country. We are, however, informed that the capacity created indigenously in respect of the several items of textile machinery would have met a larger portion of the total demand if the capacity created had gone into production fully to the extent of the licensed capacity. However, utilisation had never been to the full extent of the licensed capacity for one reason or another. For the last two licensing periods, it had, however, been ensured that the requirement of foreign exchange for the import of components/raw materials of the machinery manufacturers was fully met. The textile machinery manufacturers, however, suffered from other difficulties such as inadequate availability of pig iron and coke.

Even if the existing licensed capacity were to be fully utilised, there would still be left a fairly wide gap between availability and demand. It would thus be advisable to license further capacity on the machinery manufacturing side. In view of the fairly long gestation period required for the textile machinery manufacturing industry, it is vital that the present policy for the import of textile machinery is sufficiently liberalised to ensure adequate and early availability of machinery, particularly of ring frames for rehabilitation and expansion. The concensus of opinion of those connected with the textile industry is that the chief obstacle in the way of accelerated rehabilitation and expansion of the industry is the inadequate availability of machinery rather than any other factor. We would thus strongly recommend to the Government that in the overall interest of the achievement of targets by the textile industry liberalisation of the import policy for textile machinery should be made early.

Financing

3.1.6. The general climate in the stock market is now fairly buoyant. Installation of the anticipated target of 2.5 million spindles would call for an investment on plant and machinery of about Rs. 91.25 crores. This sum would require to be raised by various entrepreneurs much before close of the Plan period. Possibly, if deferred payment facilities could be extended on a larger scale by the Indian textile machinery manufacturers, as are being extended by overseas suppliers, the position of finding the necessary finance by the textile industry would to that extent improve. Larger extension of deferred payment facilities has been recommended by us mostly keeping in mind the requirements of finance for setting up of new units. The existing financially viable textile units might not be so much in need of these facilities since these units are today only waiting to lift whatever machinery is made available to them. There are a number of weak units badly requiring rehabilitation. Further, we do visualise 2.5 million spindles to be set up anew. Thus the greater extension of deferred payment facilities would to a considerable extent facilitate early installation of new capacity and rehabilitation of the weak units. The present position is that our leading machinery manufacturers do offer deferred payment facilities to mills extending over a period of up to five years. These facilities are given against mills' producing bank guarantees.

The above facility does not, however, fully meet the difficulties of those weak units which are not in a position to secure bank guarantees. They may have already hypothecated their fixed and current assets to various institutions, including N.I.D.C., against loans already received and in that event it is not easy for them to obtain bank guarantees. In the case of the coal industry, the World Bank had given a loan of 35 million dollars but it could not be utilised on the required scale by the coal industry mainly due to the inability of individual units to raise the necessary rupee finance. The Government of India, therefore, came to the aid of this industry to take on themselves a major portion, viz. 65% of the risk in the advances to be made by banks and other financial institutions specified for the purpose, and nominated the Refinance Corporation for Industries Ltd. as their agent for administering the scheme for the guarantee of advances granted to private sector coal industry introduced by Government in April, 1963. This arrangement has made it easier for banks and other financial institutions to advance rupee finance to the coal units as their risk has been reduced to 35%. If similar assistance could be extended by the Government through the Refinance Corporation to the cotton mill industry for raising rupee finance for the purchase of either foreign or indigenous machinery, it would go a long way in helping the weaker units to rehabilitate themselves and in the early installation of new capacity by the industry.

It would be pertinent to remark at this stage that greater efforts are also to be taken by the co-operative spinning mills (accounting for 2.42 lakh spindles spread over 19 licensed units) if the licensed capacity is to come into being. The State Governments should thus bestow greater attention on this matter. It is understood that this matter came up for detailed discussion at a recent seminar held in New Delhi.

Thus, even with the best of efforts, the capacity that might come into being by the close of the Third Plan might be 2.5 million spindles raising the industry's installed capacity to 16.5 million spindles.

Yarn Production

3.2.1. Production of yarn by the industry is currently (average of 1963) running at the rate of 164.7 million lbs. per month (74.4 million kgs per month) or an annual production of 1968 million lbs. (893 million kgs). This would mean that the industry's production should go up by 282 million lbs. (128 million kgs) during the next two years if the target of yarn production is to be achieved.

3.2.2. There is no gainsaying that the primary requirement for reaching the target of yarn production is to increase the installed capacity of spindles. Nevertheless, a small increase in yarn production could be achieved by recourse to some greater intensification of working of existing capacity in the third shift. A utilisation of 87% to 89% of capacity in the first two shifts should be considered the optimum if due account is taken of the extent of unavoidable idleness owing to repairs, maintenance and closure of units and the present set up and character of production of the industry. In this context, therefore, the average working of about 89% of the installed capacity in the first shift and 88% in the second shift (as recorded in 1962 and Jan.-Nov. 1963 also) should be considered as very good.

3.2.3. As regards working in the third shift, it is seen that there has been a sustained pressing into service of larger number of spindles. The average working, which was as low as 33.4% in 1958, reached the figure of 58% in 1962 and further moved up to 66.4% in Nov. 1963. Third shift working cannot be resorted to by all the mills because of the fact that in many of the mills preparatory machinery may not be adequate to feed full working of that shift. When a mill is completely balanced, it should be possible for it to work a larger percentage of spindles in the third shift. It has also been represented that third shift working is less economical than the first and second shifts for the reason that supervision and the quality of working in the third shift are not normally as efficient as in the first two shifts. The working hours in third shift are 6½, while labour has to be paid full wages for 8 hours. Further, under the labour regulations, discontinuance of third shift with the resultant displacement of labour would entail compensation being paid to the labour so discharged which detracts many of the mills from working this shift unless such working could be continued as a permanent measure. On practical considerations, therefore, it would be quite good if the industry is able to maintain the latest level of working of the installed capacity in the third shift. To maintain and even improve slightly the current rate of working it may be necessary in some cases to press fully into service the preparatory sections of the spinning department like blow room, carding, drawing, etc. A further improvement in production could be achieved only if the existing capacity could be worked, wherever possible, on a full round the clock working including Sundays and by adopting a relay system, if necessary. The willing cooperation of the labour and the State Governments will, however, be very necessary. It will thus be seen that the current utilisation of spindleage is very satisfactory and any additional production by further intensified utilisation of capacity could only be marginal.

3.2.4. As mentioned earlier, we anticipate an installation of 2.5 million spindles against the licensing of 3.7 million spindles issued to new undertakings and for substantial expansion of existing units and the licensing of "marginal" expansion of existing units. Installation of the above order would call for sustained efforts from the industry and also for liberalisation of the Government policy for the import of textile machinery as well as stepping up of indigenous production of textile machinery. We should ensure that installation of a little over one million new spindles is effected atleast by the beginning of 1965-66. We may expect at the outset an additional annual prodution of 200 million lbs. (91 million kgs) to be generated by these spindles. It is, however, assumed that the counts spun would generally be of the coarse and medium groups.

3.2.5. Thus, on the assumption that the present capacity in the industry continues to be worked at the current levels of working in all the shifts, including the third, and that one million spindles would at least get commissioned at the beginning of 1965-66, the annual production at the beginning of 1965-66 may be placed at 1968 plus 200—2,168 million lbs. (984 million kgs). With the further installation of spindles during the final year of the Plan period, it is expected that, with the adequate availability of cotton, the target of 2,250 million lbs. (1,021 million kgs.) would be very nearly possible of achievement. It should again be emphasised that the achievement of target would call for the existing textile units and the other licences taking concerted efforts in the direction of installing the additional permitted capacity.

3.2.6. The achievement of the physical target of 2,250 million lbs. (1,021 million kgs.) is further conditioned by the fact that the industry should continue to keep to the present pattern of production as judged by the average count. It would be necessary to ensure that the average count of the industry is maintained around 26s (Nf 22) since any shift to the finer side would bring down the production by weight.

Cotton

3.3. Apart from its dependence on capacity, the realisation of the target of yarn production is greatly affected by the availability of cotton. During the last four cotton years, the cotton crop had been fluctuating widely between 38.5 and 55 lakhs bales. Consequently, the annual imports of cotton had to be stepped up considerably during recent years to as much as even 11 lakh bales. The target of cotton crop for the Third Plan has been fixed at 70 lakh bales. Based on the wide fluctuations in the annual crop and other concerned aspects, it does not look that the target is anywhere near realisation. Based on the rate of mill cotton consumption during 1962 and January-November 1963, it is estimated that the target production of 2,250 million lbs. of yarn would result in a consumption of 67 to 67.5 lakh bales. It is to be seen how far the crop prospects in the next two years would improve so as to make available the necessary quantity of cotton for consumption as also for maintaining adequate stocks to ensure price stability.

Cloth

3.4.1. The target of cloth production has been fixed at 9,300 million yards (3,504 million metres), 5,800 million yards (5,304 million metres) for the mill sector, 3,350 million yards (3,063 million metres) for the decentralised sector consisting of handlooms and powerlooms and 150 million yards (137 million metres) for the Khadi sector. Simultaneously it has also been targetted that 850 million yards (777 million metres), mostly made of mill cloth, would be exported.

3.4.2. To enable the mill industry to step up its cloth production, a target installation of 25,000 looms was envisaged mostly with export orientation. So far 2,000 looms have been licensed to 4 export oriented units, each of 25,000 spindles and 500 looms, and issue of licenses to another nine parties is under consideration. From the progress of steps being taken by the licensees, it appears the installation of looms against these licensees might not be substantial.

3.4.3. Mill cloth production is veering around 4,900 million yards (4,481 million metres). Possibly with the further utilisation of existing looms to the extent of 10% in the third shift, the industry could step up its production to 5,000 million yards (4,572 million metres) with the existing installed capacity of 2 lakh looms.

Need for Additional Looms

3.4.4. On the basis of maximum utilisation of the existing looms in the industry, we could have an annual production of 5,000 million yards (4,572 million metres) by the end of the Third Plan, leaving a shortfall of 800 million yards (732 million metres) in the Plan target for the mill sector. The production in the decentralised sector is today of the order of 3,060 million yards (2,798 million metres). The decentralised sector will thus have only a balance of 290 million yards (265 million metres) of the target to be bridged. Chances are that this gap would be filled up.

3.4.5. It is, however, very necessary to ensure that the full target of cloth production is achieved by the mill sector. In view of the fact that the chances of early installation of looms would greatly improve if additional looms were allotted to the existing mills, it has been decided that every existing composite mill may expand its loomage marginally by up to 10% of its licensed loomage and that every existing purely spinning mill may install up to 100 looms. The mills have also been advised to complete all steps connected with the additional installation before the 31st December, 1964. It is expected that the additional looms that might get installed against these schemes might be only 10,000. with the progressive installation of these and of the export oriented looms, we might on the outside expect an annual additional production of 450 million yards by the end of the Plan period. The mill production of fabrics might, therefore, fall short of the target by 350 million yards. This would mean that the overall per capita availability of cloth might be less by 0.7 yards than the target of 17.4 yards envisaged in the Plan. This reduction in availability might, however, get nearly covered since the export of fabrics might not be of the level targeted (please refer to para 2.51).

The two tables below give figures of indegenous production, projected demand and the expected shortfall of weaving and processing machinery during the next 2½ years of the Third Plan period:

Total demand for weaving and processing machinery during the next 2½ years

Name of machine	Replacement demand	Expansion (2·5 million spindles and 20,000 looms)	Total demand
(1)	(2)	(3)	(4)
Warp Winding m/c.	177	281	458
Warping m/c.	135	48	183
Sizing m/c.	130	48	173
Plain loom	4,312	6,000	10,312
Automatic loom	12,375	14,000	26,375
Processing m/c. (Value—Rs. crores.)	13·5	8·0	21·5

Total recruitment, production and shortfall during the next 2½ years

Name of machine	Total demand (both for expansion & replacement	Capacity created (Annual basis)	Expected indigenous production	Shortfall
(1)	(2)	(3)	(4)	(5)
			(*in 2½ years)	
Winding m/c	458	180	107	351
Warping m/c.	183	60	23	160
Sizing m/c.	178	100	50	128
Plain loom	10,312	5,640	6,637	665
Automatic loom	26,375	5,100	9,631	16,744
Processing m/c. (Value—Rs. crores)	11·5	—	10·0	11·5

NOTE.—The figures of expected indigenous production have been arrived at on the basis of the current rate of production and the anticipated increase in the rate of production in future by the different manufacturing units. It is, however, claimed by the Central India Machinery Manufacturers Co. Ltd. (CIMMCO) that they could step up the production of winding and warping machinery and auto looms to a substantially higher level over that of the units' licensed capacity for these items of machinery.

3.4.6. The installation of these additional looms as also of the export oriented looms would call for considerable outlay of money, both of local currency and foreign exchange.

Exports

3.5.1. The current level of exports is fluctuating around 550 million yards (500 million metres). Actual exports of mill-made fabrics were only 571, 508 and 530 million yards (522, 464 and 485 million metres) in 1961, 1962 and 1963 respectively. World export trade in cotton textiles (excluding exports of the U.S.S.R. and other minor exporting countries) has been nearly steady and is around 5,200 million yards (4,755 million metres). There are also other developments, i.e., restrictions in the importing countries, the setting up of cotton textile mills in some of the Asian and African countries who have been traditional consumers of our textiles. There is also keen competition from China, Japan and Hongkong. Our exports may have to be diversified to cater to the changes in the demand pattern. In the circumstances, our exports of cotton fabrics may not very appreciably move above 600 million yards (550 million metres) as against a target of 850 million yards (777 million metres) including handloom fabrics whose exports in 1962 and 1963 aggregated to 28 and 32 million yards (25 and 29 million meters).

Rehabilitation and Modernisation

3.6.1. The industry is in great need of rehabilitation and modernisation and the Working Group set up by the National Industries Development Corporation (N.I.D.C.) had estimated the financial requirement of a modest scale of rehabilitation and modernisation of the industry during the Third Plan period at Rs. 180 crores. Indications are that the industry is by and large re-equipping itself but very slowly. It is estimated that the annual requirement since 1960 has been to the extent of Rs. 20 to Rs. 25 crores. The Indian Cotton Mills Federation and the Reserve Bank Study, however, place the figure of gross annual increase in the value of plant and machinery of the existing units in the industry at around Rs. 40 crores. These figures would, however, require a more intensive scrutiny before they are finally adopted since they include money expended on expansion by the existing units. The large scale expansion envisaged for the Industry and the somewhat reduced extent of availability of indigenous machinery and foreign exchange come in the way of accelerated rehabilitation of the industry.

3.6.2. The slow pace of rehabilitation of the industry is not primarily due to lack of finance but is to a large extent due to inadequate availability of machinery and machinery parts. We were informed that the manufacturers of certain spare parts and attachments like drafting system were almost fully booked for supplies to machinery manufacturers who use these parts on their machines. Thus the running mills desirous of modernising their drafting system are very much handicapped due to the long delivery position of this equipment. Rehabilitation of equipment does not necessarily mean putting in of completely new machinery. Replacement of the major parts of a machine would rehabilitate a machine to such an extent that, insofar as its productive capacity and cost of production are concerned, the modernised machine compares very favourably with a new machine. We, therefore, feel that quite apart from developing the capacity of the indigenous machiney manufacturers it seems essential for Government to encourage the coming into being of certain machinery manufacturers who would cater exclusively to the requirements of rehabilitation and modernisation of the existing units. Such a measure would provide a great fillip to the modernisation of the existing units in the industry.

Summary

3.7. On the whole, therefore, the achievement of the targets of capacity and production for the Third Plan calls for greatly sustained efforts in the direction of liberalisation of the current policy on import of textile machinery, particularly ring frames and cards, stepping up of cotton production and the finding of the necessary financial resources, both rupee finance and foreign exchange.

CHAPTER IV

PER CAPITA DEMAND PROJECTIONS FOR THE FOURTH AND FIFTH PLANS

Present Consumption

The figures of production, consumption, imports and exports and per capita availability of cotton cloth from 1950 onwards are given in the attached table (Appendix II). It may be seen that while exports of cotton cloth have been declining in recent years, production has steadily gone up to meet the increased requirements of the population. In the First Plan, the per capita consumption of cloth was envisaged to increase to 15 yards (13.7 metres) by 1955-56. The figure actually reached in 1955 was 15.7 yards (14.4 metres). In the Second Plan period, it was expected that consumption would increase to 17.5 yards (16.0 metres) per capita. The actual consumption achieved in 1960-61 was 15.4 yards (14.1 metres). The Third Plan envisages that the per capita consumption would increase to 17.4 yards (15.9 metres) by 1965-66.

In recent years, production and consumption of fabrics made of man-made fibres has been increasing. If account is taken of this fact, the per capita consumption would, over the years, indicate a rising trend. Actually, the total per capita availability of cotton and art silk fabrics has moved from 12.89 yards (11.79 metres) in 1951 to 17.29 yards (15.81 metres) in 1956 and 17.37 yards (15.88 metres) in 1961 and 16.80 yards (15.45 metres) in 1962. The sartorial habits of the people are also changing significantly with an emphasis on lower length per unit of clothing than what was used earlier—4 yards dhoti to 3 yards shirt to 2½ yards bush shirt. The new types of fabrics are further slightly more amenable for home washing and easy drying thereby resulting in the maintenance of a somewhat lesser sized wardrobe.

Internal Demand

4.2. The population of India at the last 1961 census was placed at 438 millions. It has been estimated by the Central Statistical Organisation (C.S.O.) that the mid-year population at the end of the Third, Fourth and Fifth Plans would respectively be 492 millions, 555 millions and 625 millions. The National Council of Applied Economic Research (N.C.A.E.R.) have also given the population projections at 492 millions, 558 millions and 632 millions respectively. The two population estimates do not vary very widely, particularly in the context of requirement of fabrics, since the error in estimation is of the order of 0.5% and 1% only. We might, therefore, take the estimates as given by the C.S.O. and approved by the Planning Commission until such time as new projections are available or the Planning Commission itself revised the figures.

Studies on Per Capita Consumption

4.3.1. In the report of the Study Group constituted to make recommendations on the projects requirements of cotton during the Fourth and Fifth Plans, the following estimates for per capita demand for cotton cloth as made by different organisations have been furnished:

Name of the organisation	Estimate of *per capita* consumption of cloth in yards.	
	1971	1976
(1)	(2)	(3)
1. Indian Central Cotton Committee	18·0	20·0
2. Planning Commission	18·0 to 20·0	22·0 to 23·0
3. N.C.A.E.R.	20·9	22·63
4. Directorate of Economics and Statistics, Ministry of Food & Agriculture	19·5	22·7

4.3.2. A brief explanation of the basis of estimation adopted by these bodies has also been furnished in the report. The explanation reads:

"The per capita demand for cotton cloth was projected by the National Council of Applied Economic Research on the basis of the expected increase in per capita income, income elasticity of demand and changes in income elasticity assuming that all other factors will remain constant. The income elasticity of demand for cotton cloth for mill-made and handloom cloth separately and for all types of cloth was derived from the available cross section data and time series. The expenditure elasticities derived from the data on consumer expenditures collected by the National Sample Survey in several rounds were converted into income elasticities. The projections made by the Directorate of Economics and Statistics were on the assumption that the per capita expenditure during the Fourth and Fifth Plan periods will increase by 11.04% and 13.66% respectively and that the expenditure elasticity for cotton cloth would be 1.2. It was agreed that generally in developing countries the income elasticity was in the neighbourhood of unity and that the income elasticity for mill-made cloth in India can be safely placed at 0.9. For handloom cloth, the present consumption of which was about 36% of the total, the income elasticity would be very much lower and in this case the natural laws were also somewhat disturbed by the rebate and other concessions offered. After some discussion, the Study Group agreed that the per capita consumption of cotton cloth which was at present about 16.04 yards might be placed at 19.5 and 22 yards during the Fourth and Fifth Plans respectively".

4.3.3. The per capita income at 1960-61 prices which stood at Rs. 330 at the end of the Second Plan period is expected to move up to Rs. 385, Rs. 450 and Rs. 530 by the end of the Third, Fourth and Fifth Plans. Simultaneously, with the additional accrual to per capita income there would also be a greater drawal of income by way of savings. The targetted percentages of saving to national income which alone would sustain the anticipated growth in the economy are 11.5%, 15.5% and 18.5% respectively at the end of the Third, Fourth and Fifth Plans as against 8.5% targetted for the Second Plan. Based on the data on consumer expenditure as given in the Draft Report of the 16th Round of the N.S.S., it is seen that during the period July 1960 – June 1961 the expenditure on clothing (all fibres) was nearly 8% of the total consumer expenditure. We might assume this figure to be uniformly applicable (with unit elasticity) up to the end of the Fourth Plan and that it would go up to 10% (an elasticity 1.25) during the Fifth Plan. The expected position regarding per capita income, saving, expenditure and increase in fabric consumption would thus be:

(Figures in Rupee)

	1961	1966	1971	1976
(*i*) Target per capita Income ..	330 (II Plan Rs. 306)	385	450	530
(*ii*) Increase in per capita income over the successive Plans ..	24	55	65	80
(*iii*) Anticipated percentage of domestic saving to per capita income	8·5%	11·5%	15·5%	18·5%
(*iv*) Anticipated per capita saving	28·05	44·20	69·50	98·05
(*v*) Anticipated per capita expenditure	301·95	340·80	380·50	431·95
(*vi*) Increase in per capita consumer expenditure	—	38·85	39·70	51·54
(*vii*) Estimated expenditure on clothing as percentage to total expenditure	—	8%	8%	10%
(*viii*) Estimated increase in per capita expenditure on clothing	—	3·11	3·18	5·14
(*ix*) Estimated increase in consumption of cotton cloth if 80% of increase goes for cotton (yds) (Rate Rs. 1·25 /yd.)	—	2·00	2·03	3·30

4.3.4. The average consumption of cloth per capita during the Second Plan period (1956-61) was 15.47 yards as against 15.40 yards achieved at the end of the Second Plan period (1960-61) and the target of 17.5 yards. The consumption per capita during the first two years (1961 and 1962) of the Third Plan works out to 15.9 yards as against a target of 17.4 yards.

4.3.5. If the figures of consumption of cloth since 1948 are closely observed they would be seen to have been fluctuating around 15 yards, except for the low figures in 1950 and 1951, the days of statutory control and the Korean war boom coupled with record level of exports. Cloth was fully decontrolled in October, 1953. Taking the period later to October, 1953, it would be seen that the per capita figures has almost been steady. Except for rise in prices during certain periods, there had not been any report of acute scarcity of cloth in general during the entire period. Some extra over normal production at some points of time had also resulted in slackness in movement and stockpiling of cloth with mills. One is thus led to infer that the rise in cloth consumption over succeeding Plan period may not be spectacular notwithstanding the fact that the present level of consumption in India is much lower relative to Western countries. No doubt an increase in consumption to the extent of one yard has been made available during the recent years by the art silk industry. One of the possible reasons for the apparent stagnation in demand is perhaps the change in sartorial fashions resulting in lower yardage per unit of wear, the somewhat increasing production of better weaving apparel and possibly the lower than expected consumption at the lower levels of consumption for one reason or another. Thus to anticipate any marked increase in per capita consumption of cotton cloth as measured by yardage only over the Fourth and Fifth Plans may not be very much realistic.

We considered in detail whether there was existing today any unsatisfied demand for cotton fabrics in the country. As remarked earlier, the near constancy in the total availability of cotton cloth for the last several years and the general feeling of a fairly adequate supply of textiles during these years led us to infer that the unsatisfied demand for cotton fabrics may not be very appreciable. We discussed this question with the representatives of wholesale trade in Bombay. The view of these representatives was that while there was some unsatisfied demand for certain particular quality fabrics, there was no unsatisfied demand of a general nature. Thus the level of unsatisfied demand could only be a very marginal one. The estimated availability of cotton cloth by the end of the Third Plan was earlier seen to reach a figure of only 17.2 yards per capita as against the targetted figure of 17.4 yards. Towards allowing for the marginal level of unsatisfied demand that exists today, it is considered advisable to plan the additional demand for cloth in the Fourth and Fifth Plans on the targetted rather than on the actual availability of cloth at the end of the Third Plan period.

The targeted additional per capita demand for cloth based on our calculations on consumer expenditure had come to 2.03 yards and 3.30 yards for the Fourth and Fifth Plans respectively. We are, however, led to feel that based on the trend in consumption of cotton fabrics, vis-a-vis the rise in per capita income and consumer expenditure over the last several years, the trend in sartorial habits of the population, the difficulties likely to be faced by us in the foreign markets in the achievement of our export target of 850 million yards (any deficiency in this field would make available a larger accrual of cloth to the internal market) and the increasing trend towards production of better quality and wearing fabrics, the additional demand for cotton fabrics during the next two Plan periods might realistically be placed at 50 per cent of the calculated demand. This would mean that the increase in the targeted per capita consumption of cloth during the Fourth and Fifth Plans would only be one yard and 1.65 yards respectively over the estimated figure of 17.4 yards for the Third Plan. Thus the target per capita consumption at the end of Fourth and Fifth Plans would be 18.4 or 18.5 and 20.05 or 20 yards respectively.

Demand by Defence and Industrial Consumers

Defence has always been a major consumer of cotton textiles. The offtake by Defence has increased considerably since the Emergency, partly towards making available uniforms for the large number of new recruits and for other miscellaneous purposes like parachute and tents. However, to the extent of increased consumption of uniform material by those drafted to the Defence forces, the consumption on the civilian account gets proportionately somewhat reduced. Regarding other items, the increase in quantitative terms as measured by yardage may not be very high. The increase in consumption by other Governmental agencies may not increase by more than the increase in population and the consumption by other industrial users may not also increase very much. Taking all these consumers into account, a maximum provision of 100 and 150 million yards as additional consumption in the Fourth and Fifth Plans might seem advisable. The requirements of cloth for internal consumption would on the basis of the estimated figure of per capita consumption and the population projections assumed earlier aggregate to 10,270 million yards and 12,500 million yards respectively. Adding the additional demand for Defence and industrial consumers, the target figures for local needs would be 10,370 millions yards and 12,650 million yards respectively.

Export Demand

4.5.1. **The current level of actual exports of octton fabrics is at 500 to** 600 millions yards against a targeted figure of 850 million yards (mostly made of mill fabrics). Indian fabrics are facing stiff competition in world markets from Japan, Hongkong, Pakistan and China and it is likely that this pressure might even get intensified in the years to come. Moreover, a number of underdveloped and developing countries in Asia and Africa, which are today large consumers of Indian fabrics, are attempting to develop their own textile industry. The textile industry being less technologically complex, every developing country launches its programme of industrialisation with the setting up of textile mills. In fact, Indian industrialists are today collaborating in the setting up of textile units in African countries.

4.5.2. **The world trade in cotton fabrics has not also been expanding** fast. During the last 5 years, world exports had been fluctuating around 4,500 to 5,700 million yards. With the increase in world population and the rising levels of standards of living in the emerging underdeveloped and developing countries, the overall demand and consequently the world export market for cotton textiles may, however, be expected to broaden in the years to come. There are today a few highly industrialised countries like Japan and the U.K. who are also competing in the field of international textile export field. Possibly, during the next decade or so these countries might shrink their activities in less technologically complex fields such as cotton textiles and move over to trading in highly complex items of manufacture to a greater and greater degree. Should this happen the share that these countries are having today in the international export market would be available for the other exporting countries like India. Taking all relevant factors into consideration it would therefore, be advisable for us to set the target well higher than the level of today's achievement.

4.5.3. The taste of the overseas buyer is towards processed fabrics. Though there has been some diversification of Indian exports, the export of Grey goods even today constitutes 59% of the total. There is further an increasing demand for garments vis-a-vis piece length and Hongkong, particularly is taking full advantage of this international trend.

4.5.4. Taking all the above facts into consideration, it would be seen that on balance the target for export of cotton textiles, both for the Fourth and Fifth Plans, may well be placed at 850 million yards, the level targeted for the Third Plan.

Imports

Our current imports of cotton textiles are almost negligible and it is not expected that there will be any major reversal of the current import policy leading to larger imports of textiles. Thus the import of textiles is not expected to play any role in the estimation of the total demand for textiles in the next two Plan periods.

Total Demand

Based on the above estimates of targetted requirements of cloth for internal consumption and for exports, the aggregate demand for cotton textiles by the end of the Fourth and Fifth Plans would nearly work out to 11,200 million yards and 13,500 million yards respectively.

CHAPTER V

ALLOCATION OF TARGETS

5.1. The allocation of cloth targets among the three principal sectors of mill, powerloom and handloom has always been controversial. The allocation has also been made difficult due to lack of adequate data of capacity and other aspects of working of the handloom and powerloom sectors.

5.2. The handloom sector has a capacity of 22.5 lakh looms (excluding 5 lakh non-commercial looms in Assam) providing support to nearly 6 to 7 million persons, thus requiring continued governmental support. One of the important aspects in our planning is to provide increased employment and also in improving the level of empolyment. Viewed in this context, any governmental measure which might come in the way of restricting the growth in production of the handloom sector would not be advisable. However, one cannot escape the fact that the handloom cannot perennially continue as what they are. As industrialisation further develops, the conventional modes of operation of equipment should gradually yield place to modern methods. Thus, in the overall interests of the weaver and the country at large the handloom sector should continually strive towards improving its method of working and thereby its productivity.

5.3. There has been wide controversy regarding the level of handloom production. The Third Plan has provided a target production of 2,800 million yards by the handloom sector. The mill and the powerloom sectors have expressed doubts whether the handloom sector is producing to the level presumed. While it is indisputable that the total annual production by the handlooms and powerlooms is today of the order of 3,060 million yards, it is somewhat doubtful whether the production by handloom is nearly 83% (76:90) of the total production in the decentralised sector that has been assumed so far.

5.4.1. The weakest member of the textile industry is the handloom sector and a sizeable portion of the total cloth production comes out of this sector. In fact, if due account is taken of the quantum of exports of mill cloth, the share in the internal consumption of handloom fabrics would come out to be very appreciable. In a situation where the total supply just meets the demand, the general price level for a product is largely influenced by the price of the weakest and hence the costliest section. Therefore, while it is very necessary to ensure continued and better employment for the handloom weavers by encouraging their production, it is also equally necessary to ensure that the handloom cloth production is so regulated as to ensure the availability of cloth to the consumer at reasonable prices.

5.4.2. Although powerloom is a member of the decentralised sector, its role in the cotton textile industry should only be made complementary to that of handloom. The growth of the powerloom industry is of very recent origin. While governmental assistance is necessary to ensure continuous and fuller employment for the handloom weaver, particularly in the interest of social justice, the same could not be said of today's powerlooms.

It is contended by knowledgeable persons in the industry that the recent excise structure has been the major factor which has helped the large-scale unauthorised growth of the powerloom industry. The problems of the powerloom industry are currently receiving attention of the Powerloom Enquiry Committee.

5.5. We do not visualise any increase in capacity in the handloom sector as also in the powerloom sector. What is to be attempted is that gradually fuller employment should be provided to the handloom weavers. This would mean that the target of production to be allocated to the decentralised sector should be stepped up from the Third Plan level of 3,350 million yards to 3,750 million yards and 4,250 million yards respectively for the Fourth and Fifth Plans. It should, however, be emphasised that the major share of the targets of production envisaged for the decentralised sector should come from the handlooms. The above allocation of targets to the decentralised sector would ensure that while providing improved levels of employment and earnings to the handloom weavers, the overall availability of cotton fabrics to the consumer would by and large be made at reasonable prices.

5.6. It is not considered that the Khadi sector might improve its production over the present target of 150 million yards in the near future. It is, therefore, proposed to continue the target of production for Khadi at 150 million yards even during the Fourth and Fifth Plan periods Thus the balance of increase in production would go to the mill sector and this increase would amount to 1,500 million yards (1,371 million metres) during the Fourth Plan and another increase of 1,800 million yards (1,645 million metres) during the Fifth Plan, thereby raising the target production for the mill sector to 7,300 million yards and 9,100 million yards by the end of Fourth and Fifth Plans.

Targeted Requirements of Yarn

6.1. The yarn requirements to produce the targeted 11,050 (11,200-150 for Khadi) and 13,200 (13,500-150 for Khadi) million yards of cloth would amount to 2,455 million lbs. and 2,970 million lbs. respectively (Basis 1 lb = 4.5 yds.). Provision for miscellaneous uses like hosiery, newar, rope etc. may be placed at 250 million lbs. and 300 million lbs. respectively. Simultaneously, as against the current level of exports of yarn of 30 million lbs., a target of 50 and 75 million lbs. respectively may be fixed for the Fourth and Fitth Plans. Thus the total requirements of yarn at the end of the Fourth and Fifth Plans would amount to 2,755 and 3,345 million lbs. (1,250 and 1,517 million kgs.) respectively. These figures are inclusive of all counts of yarn, including yarn spun from waste. This target for yarn consumption might possibly have to be slightly revised downwards if the rate of increase in the indigenous availability of longer staple cotton warrants an upward revision of the overall conversion factor from yarn to fabric.

Cotton

6.2. The requirements of cotton to produce the targeted quantities of yarn for the Fourth and Fifth Plans would respectively amount to 81 and 98.5 lakh bales (basis 100 lbs. of cotton yield 85/86 lbs. of yarn).

Cotton exported outside the country essentially consists of short staple varieties like Bengal Deshi. The level of annual exports of Bengal

Deshi during the Third Plan period has been nearly 3 lakh bales. We are informed that measures to increase the production of Bengal Deshi cotton are going to be slightly modified and intensified. Bengal Deshi Cotton is in good demand in some of the importing countries, particularly Japan. While the world demand for short staple cotton might not increase very rapidly, it would be advisable for us to plan for a progressively increasing level of exports of cotton, including cotton other than Bengal Deshi. We might, therefore, fix a target of 4 and 5 lakhs bales respectively as exports of cotton during the Fourth and Fifth Plans.

The extra-factory consumption of cotton has been estimated by the Study Group constituted to make recommendations on the projected requirements of cotton at 3.37 lakh bales and 3.80 lakh bales respectively. We are of the view that these estimates are realistic.

India has been a traditional importer of long staple cotton. In recent years, the average level of imports of long staple cotton has been nearly 8 lakh bales. This includes imports from global areas and also under P.L. 480. Imports of cotton under P.L. 480 would be granted by the U.S.A. only if we import annually a minimum of 4.28 lakh bales from our traditional importers. Concerted efforts are being made to increase the production of long staple cotton within the country. It is even hoped that possibly by the end of the Fourth Plan period, the requirements of cotton of staple up to and including 1.1/16 may be met from out of the indigenous production. The demand for fine and superfine fabrics both mill-made and of handloom fabrics is quite substantial and is expected to considerably increase in the years to come. Taking all the factors into consideration, we are of the opinion that the level of imports during the next two Plan periods may have to be continued at today's level. Thus a target of import of 8 lakh bales of cotton may be prescribed for the Fourth and Fifth Plan periods.

The overall picture of the requirements of cotton would thus be:

(in lakh bales of 100 kgs each)

Item	Fourth Plan	Fifth Plan
(1)	(2)	(3)
Total requirements of cotton for producing the targeted quantity of yarn	81·00	98·50
Ex-factory consumption	3·37	3·80
Exports of cotton	4·00	5·00
Total requirements of all cotton	88·37	107·30
Imports	8·00	8·00
Total requirements of indigenous cotton	80·37	99·30

This would mean that the indigenous production of cotton would have to be nearly 80 and 100 lakh bales respectively during the Fourth and Fifth Plan periods.

Spindles

6.3.1. It has been assumed while estimating the requirements of spindles for the Third Plan that 12.7 million active spindles would yield a production of 1,750 million lbs. It is not expected that in the coming years the character of production of yarn would materially change since bulk of the production would have to come out of Indian cotton and the pattern of Indian cotton production again may not get violently changed during the next 5 or 10 years. The productivity of new spindles is considerably higher than of the existing spindles. Nevertheless, it would be advisable to play a little safer and plan for a slightly higher capacity so that should circumstances warrant the additional available capacity could always be commissioned to generate increased production.

6.3.2. The planning of an additional installation of 4 million new spindles to produce 500 million lbs. during the Third Plan period was somewhat on the higher side. In other important countries like the U.S.A. and Pakistan wherein the industry is either modernised or fairly recent, the average annual production per spindle works out to about 200 lbs. as against India's current average of 136 lbs. No doubt, the average production depends on count-wise pattern of yarn production. Perhaps, it would be advisable to assume an annual production of 175 lbs. per new spindle for future planning.

Apart from expansion of capacity in the industry in the succeeding Plan periods, it is also envisaged that the existing capacity in the industry would gradually get rehabilitated and modernised. During the remaining two and a half years of the Third Plan period we have programmed for a rehabilitation of 1.5 million spindles. We might anticipate a further rehabilitation of 4 million spindles during the Fourth Plan and another 5 million spindles in the Fifth Plan period. Thus by the end of the Fourth Plan period, bulk of the existing capacity in the industry would have been rehabilitated and by the end of the Fifth Plan period, the industry would have been almost fully modernised. The rehabilitated spindles may be expected to yield a rate of production intermediate to that on the existing spindles and on new spindles. This means that we might assume a rate of 150 lbs. of annual production per rehabilitated spindle. The additional annual production that may be realised due to rehabilitation at the end of the Fourth and Fifth Plan periods would, therefore, be 82 and 157 million lbs. respectively over the current annual level of production of 1,965 million lbs. for the entire industry. Thus the planned increase in spindles in the Fourth and Fifth Plan periods should provide for realising an annual production of (2,755—1965-82) = 708 million lbs. and (3,345—1965—157) = 1,223 million lbs. On the basis that a new spindle would yield an annual production of 175 lbs., the additional capacity to be planned over the present would work out to 4.05 and 7.05 million spindles. Thus the targetted capacity of the industry at the end of the Fourth and Fifth Plan periods would respectively be (14.3 plus 4.05) = 18.35 and (14.3 plus 4.05) = 21.35 million spindles.

Cloth is a basic consumer commodity and the production of the same has, therefore, to be decentralised. While cotton is grown fairly widely throughout the country, there are concentrations of cotton tracts. No doubt, the textile manufacturing process is not of a very complicated nature. As such, training of labour could be easily handled. Handloom industry is also widely dispersed over the entire country. Taking these factors into consideration, it would appear that a policy of fairly dispersed setting up of textile units would be advantageous. However, it should not be forgotten that it is the economics of production which should ultimately decide on the location of a cotton textile unit. Licensing of spindles for new units in the Third Plan was made on a regional basis, the deficit regions getting a bigger share of the additional spindleage. The experience, however, has been that for one reason or another the licensees in the backward deficit regions have generally failed to take effective steps for putting up the capacity. Further, some of the licensees in the deficit areas adjoining the cotton textile centres are the existing textile industrialists themselves and possibly these licensees alone might set up the units. None can deny that full encouragement should be given for improving backward regions. Such an improvement should, however, be on an overall basis and not restricted to giving of licences for setting up of one or the other of the industries. The development of these regions should be on an integrated basis. We, therefore, recommend that the distribution of the additional spindleage and loomage over the different regions should be based strictly on economic considerations and issued to those who would set up the capacity without much delay. No doubt, it should be ensured that in such a process concentration of capacity in a few hands is avoided.

Looms

6.4. On the basis of 2 lakh looms generating at the outside 5,000 million yards, the loom capacity required for the mill sector to produce a target of 7,300 and 9,100 million yards would be 2.92 and 3.64 lakh looms respectively. The actual addition needed would, however, be considerably lower in view of the fact that the new looms to come would be highly productive and would also be put to more intensive use. If we assume that the average annual production on the new looms would be 25% more than the current average annual production of 26,000 yards or 32,500 yards per loom and since the existing looms would also be rehabilitated the number of looms required would work out to 2.65 lakhs and 3.20 lakhs respectively. The question of allocation of the additional looms between the existing mills and the new mills and amongst the various regions is one for careful consideration.

Investment

6.5. The estimate of total investment in the spinning, weaving and processing machinery and on buildings and other equipment is expected to be around Rs. 225 crores and Rs. 320 crores respectively during the Fourth and Fifth Plan periods. The estimate is based on the current value of machinery and equipment. The foreign exchange component of the investment could be estimated only after the targets of indigenous production of textile machinery are finalised.

Labour

6.6. Today, the mill sector provides employment to 9.3 lakh workers. It is very essential that productivity, both of labour and machinery, should gradually increase. In fact, modern textile machinery is intricate and highly productive. While rationalisation of workloads in the existing units would require to be judiciously pursued, it should be ensured that the new capacity which would come into being should be planned properly with the emphasis on productivity. Some of the new spindles are now working on a rationalised basis. Labour should be suitably compensated for the higher productivity that it yields. In the absence of information on the possible allocation of spindles and looms between the new and old units it may not be possible to estimate accurately the additional employment that would be generated during the succeeding two Plan periods, particularly since the industry is likely to take advantage of expansion of capacity for putting the existing capacity on a more rationalised basis. We might, however, place the figure of target employment during the Fourth and Fifth Plans at 10.7 lakhs and 11.7 lakhs respectively. It is not expected that there would be any further direct employment in the decentralised sector. The additional activity would only go to improve the level of employment of the weavers and increase to some extent the number of workers engaged in processing and other ancillary activities.

CHAPTER VI

PATTERN OF PRODUCTION

7.1. The Study Group has also been asked to estimate the targets of yarn and cloth production for individual count groups and categories like coarse and medium. Production of yarn has mainly to be oriented to the pattern of cotton grown in the country. Even the large-scale attempts that are now being made to improve the staple of Indian cotton are not likely to result in making violent changes in the pattern of availability of different staple cottons atleast in the near future. We are, however, informed that by the end of the Fourth Plan period the industry's requirements of cotton of staple length less than 1-1/16″ would be almost fully met by indigenous cotton. Nevertheless, a major portion of the local cotton crop would continue to be of medium staple. This being so, bulk of the production of yarn and cloth would continue to be in the coarse and medium group of counts say up to 30s.

7.2. Other things remaining the same, the price of fine and superfine fabrics is generally higher than the price of coarse and medium fabrics. Consumption of the general public is in the course and medium categories, even though there is an increasing demand for the fine and superfine fabrics even at the lower income levels. In our attempts at stepping up of the cotton textile production in the succeeding Plan periods, it should, therefore, be seen that progressively the availability of common consumer varieties at reasonable prices is ensured to a greater and greater extent.

7.3. The need for concentration of our attention in future on the production of coarse and medium categories of fabrics would be further highlighted by the fact that the per capita expenditure on clothing at the lower levels of consumer expenditure is now very low. Details on the pattern of consumer expenditure as made available from the Draft Report of the Sixteenth Round of the NSS are furnished below.

Monthly per capita expenditure	Average per capita monthly expenditure (in Rs.)			
	Rural		Urban	
	Total	Clothing	Total	Clothing
(1)	(2)	(3)	(4)	(5)
0—8	6·66	0·08	6·37	0·05
8—11	9·57	0·22	9·73	0·10
11—13	12·05	0·69	11·95	0·27
13—15	14·03	0·69	13·96	0·39
15—18	16·42	0·83	16·52	0·61
18—21	19·61	1·35	19·41	0·66
21—24	22·45	1·86	22·35	0·89
Average .. .. .. (Including classes 25 and above)	21·44	1·81	29·62	1·80

(Consumer expenditure given above relates to the period July 1960—June 1961).

7.4. Right up to the class of consumers, both rural and urban with per capita monthly expenditure of less than Rs. 18 (who represent 52% and 32% of these respective populations), the average monthly per capita consumption on clothing is Rs. 0.61 for urban and Re. 0.83 for rural population. This would mean that consumers with expenditure less than this level, who in fact form the majority of the population, consume per head per year cloth of value of less than Rs. 10. This would mean that the average annual consumption is less than about 8 yards. Thus even the present low overall per capita consumption, which is around 16 yards, is largely made up of consumption by the population in the higher expenditure group. Thus all measures aimed at stepping up of cotton textile production should be so designed as to ensure that the low expenditure groups of people should secure their textile requirements at reasonable prices. This means that the additional textile production should come mainly from the coarse and medium categories. Such planning would only be in keeping with the basic objective of planning of ensuring at least the minimum amenities to the poorer sections of the community.

Optimum Capacity of Spinning and Composite Units

7.5. The Working Group set up by the National Industries Development Corporation, which reported in 1960, was of the view that the minimum economic size of a workable textile unit in the conditions then prevailing was 12,000 spindles and 300 looms. The Committee, however, added that while this was the absolute minimum capacity, the industry could as far as possible come up to the level of 18,000 spindles and 400 looms and, in due course, to a higher stage of 25,000 spindles and 500 looms. The current thinking on the subject is that a spinning unit should have 25,000 spindles and a composite unit 500 looms and 25,000 spindles if they are really to be economic. Already, Government have decided to grant permission for mills with capacity less than 25,000 spindles to raise the same up to 25,000 spindles each. Based on the above considerations as also on the trend in the unit capacity of preparatory machinery in the spinning and weaving departments, we are led to recommend that the size of a spinning and composite mill should at least be 25,000 spindles and 500 looms respectively.

It need hardly be emphasised that the new units to come should come in with the latest available machinery. The indigenous machinery manufacturing industry should be fully alive to the world trends and manufacturing industry should gear itself to making continued improvement in the design of its machinery. We hear today of high production cards, continuous automatic spinning, non-woven fabric etc. etc. The textile industry and the textile machinery manufacturing industry should be fully alive to the world trends and keep themselves abreast of these developments.

Requirement of Technical Personnel

Spinning

7.6.1. Some studies on the requirement of technical personnel in the cotton textile industry have been made by the South India Textile Research Association, Coimbatore (SITRA) and the Ahmedabad Textile Industries Research Association (ATIRA). It is gathered from these studies that the average number of supervisory personnel employed for

10,000 spindles is 2.0 for a mill on two shifts and 2.5 on three shifts. Of late, there is a greater tendency to employ a larger number of supervisors because of the need for good maintenance of modern machinery and for the understanding of the somewhat complicated mechanisms built in these machines. It may, therefore, be appropriate to assume that on an average 3.5 supervisors per 10,000 spindles would be required for a three-shift working. Therefore, the additional supervisory staff that would be required to adequately supervise the existing spindleage of 14 millions will be 1,400. The cumulative addition to spindleage during the remaining 2½ years of Third Plan, Fourth and Fifth Plans is expected to be of 4.05 millions by the end of the Fourth plan and 7.05 millions at the end of the Fifth Plan. We also expect that the new spindles would be put to three-shift working. Therefore, the additional technical personnel that would be required to man these spindles would be 1,420 and 2,440.

The number of supervisors at present employed in the several spinning departments of the industry has been estimated to be 2,800. Assuming the length of service of a supervisor as 35 years, the natural wastage allowing for other causes may be put at 4%. The vacancies that are likely to arise consequent on natural wastage over the next seven and twelve years will cumulatively be 785 and 1,345. Further, the number of technical personnel required to reduce the number of unqualified supervisors from the existing level of 40 per cent of the total to 10 per cent of the total may be estimated at 840. Thus the total number of technical personnel required at the end of the Fourth and Fifth Plans would be:

	Additional requirement of supervisors	
	IV Plan (Cumulative	V Plan Total)
	(1)	(2)
(*i*) Additional supervisory staff for the existing spindleage	1,400	1,400
(*ii*) For the manning of new spindles	1,420	2,440
(*iii*) Filling up of vacancies arising from retirement etc. of existing personnel	785	1,345
(*iv*) Extra staff required to reduce the percentage of unqualified persons employed today	840	840
(*v*) Natural wastage of above (*i* to *iv*)	554	1,336
	4,999	7,361
Total supervisory personnel required assuming that 25 per cent seek jobs in organisation other than the textile mills	6,250	9,200

Weaving

7.6.2. According to a study made by ATIRA, the number of technical personnel per 100 looms for two shifts is now on an average 1.5. With the advent of automatic looms and other modern preparatory machinery, the requirement will go up to 2 per 100 looms for two shifts or 2.5 for 100 looms for 3 shifts. The present loomage is expected to go up by 65,000 looms and 1,20,000 looms by the end of the Fourth and Fifth Plans. The supervisory staff that the new looms would necessitate employing would be 1,625 and 3,000. In addition the strength of supervisors on existing looms would require to be raised from 1.5 to 2 per 100 looms.

The technical personnel required to reduce the number of unqualified persons (today the total is estimated at 2,850) from the existing level of 45 per cent to 10 per cent of total will be 995. Thus, the total number of technical personnel required at the end of the Fourth and Fifth Plans would be:

	Additional Requirement of Supervisors	
	IV Plan	V Plan (Cumulative Total)
(*i*) Additional technical staff for the existing looms	950	950
(*ii*) For manning new looms	1,625	3,000
(*iii*) Filling up of vacancies arising from retirement etc. of existing personnel	800	1,368
(*iv*) Extra staff required to reduce the percentage of unqualified persons	995	995
(*v*) Natural wastage of above	612	1,515
SUB-TOTAL	4,982	7,828
Total supervisory staff required assuming that 25% seek jobs in organisation other than textile mills	6,227	9,785

Finishing

7.6.3. According to a study by ATIRA, the number of technical personnel employed in the finishing section is, on an average, 2 per 10,000 metres of finished cloth for two shifts and the recommended staffing is about 3 per 10,000. At present, about 7% of the mill cloth is processed in one form or the other. This percentage is expected to go up to 75% and 80% by the end of the Fourth and Fifth Plan periods respectively. Thus the additional requirement of technical personnel in the finishing department would be 1,125 and 1,727.

7.6.4. To summarise, the number of technical personnel additionally required by the end of the Fourth and Fifth Plans would be:

	Fourth Plan	Fifth Plan
Spinning	6,311	9,301
Weaving	6,227	9,785
Processing	1,125	1,727
GRAND TOTAL	13,663	20,813

The additional personnel may perhaps be 25 per cent degree holders and 75 per cent diploma holders. This would mean that on an average 500 degree holders and 1,500 diploma holders should come out of the technical institutions every year during the Fourth and Fifth Plan periods.

In addition to textile technical personnel, the industry would require employment of a large number of personnel qualified in engineering and other aspects of management viz., accounting statistics, secretarial practice, industrial engineering etc. etc. A proper evaluation of the requirements of these personnel is beset with many difficulties. We would, however, stress that increased opportunities for training such personnel be created in the country at an early date.

Target Requirements of Power and Fuel

7.7. The target requirements of power and fuel for the cotton textile Mill industry during the Fourth and Fifth Plans have been estimated on the basis of certain power equivalents amongst electricity, coal and fuel oil and on the basis of the details of consumption of power and fuel by the cotton mill industry in 1958 as made available by the thirteenth Census of Indian Manufacturers, 1958.

The power equivalents are:

0.746 KWH = 1 H.P. hour
= 2.2 lbs. of coal
= 0.88 lbs. of fuel oil.

Details of consumption of fuel and power in 1958 are:

Item	Quantity	Value	Equivalent k.w.h.
	(million)	(Rs. million)	(million)
Electricity	1611 k.w.h.	94·3	1,611
Coal	1·43 tons	59·3	1,083
Fuel oil	46 gallons	30·9	351
	TOTAL	184·5	3,045

The average cost of fuel and power in 1958 worked out to 6 nP. per k.w.h. The total value of cloth and free yarn sold (by the corresponding units for which the above power figures relate to) in 1958 was Rs. 4,562 millions. Thus, the value of power and fuel for every one rupee value of yarn and cloth sold by the mill industry in 1958 equals 4.05 nP. This means that the requirement of power for every rupee value of yarn and cloth is 0.6675 k.w.h.

Estimation of Power Requirements by the cotton mills during Fourth and Fifth Plans

Item	Fourth Plan	Fifth Plan
Target-mill fabric production (in million yards)	7,300	9,100
Free Yarn (million lbs.)	1,133	1,323
Value of cloth & Free Yarn at 1958 rates (million)	7,956	9,722
Requirements of fuel and power (million k.w.h.)	5,311	6,489

Thus the total target requirements of fuel and power by the cotton mill industry may be placed at 5,300 and 6,500 million K.W. hours at the end of the Fourth and Fifth Plans. It is not, however, possible to give the break-up of requirements separately for each source of energy viz. electricity, coal, fuel oil.

These target requirements may perhaps have to be raised somewhat if account is taken of the increased processing of mill fabrics envisaged in future. We have assumed in the above calculation that requirement per unit of production on new machinery will not be significantly different from today's average requirement for the industry as a whole. These calculations further relate only to the mill sector. Requirement of power for the cotton power-looms could be estimated when once the cloth target for the power-loom industry is separately known.

CHAPTER VII

SUMMARY

To summarise, we anticipate that the internal per capita availability of cotton fabrics should improve at least from 17.4 yards to 18.5 and 20.0 yards respectively during the Fourth and the Fifth Plan periods. Even for the Fourth and Fifth Plan periods we believe that the present target of 850 million yards of exports might be continued. These targeted requirements of cotton fabrics would in turn call for certain levels of installation of spindles and looms by mills, consumption and production of cotton and production of yarn and result in the creation of some additional employment. The relevant targets of these several related items are indicated in Appendix I.

APPENDIX I

Targets At A Glance

Item	Unit	Third Plan	Fourth Plan	Fifth Plan
(1)	(2)	(3)	(4)	(5)
1. Total Cloth Production ..	Million Yds	9,300	11,200	13,500
	„ Mtrs.	(8,504)	(10,241)	(12,344)
2. Mill Sector Cloth Production ..	„ Yds.	5,800	7,300	9,100
	„ Mtrs.	(5,304)	(6,675)	(8,321)
3. Decentralised (Handloom & Powerloom) Sector cloth production	„ Yds.	3,350	3,750	4,250
	„ Mtrs.	(3,063)	(3,429)	(3,886)
4. Khadi Sector Cloth Production	„ Yds.	150	150	150
	„ Mtrs.	(137)	(137)	(137)
5. Per Capita Cloth Availability	Yds.	17·4	18·5	20·0
	Mtrs.	(15·9)	(16·9)	(18·3)
6. Exports of Cloth	Million Yds.	850	850	850
	„ Mtrs.	(777)	(777)	(777)
7. Total Yarn Production ..	„ Lbs.	2,250	2,755	3,345
	„ Kgs.	(1,021)	(1,250)	(1,517)
8. Spindle Installation	„	16·5	18·4	21·4
9. Loom Installation (Mill Sector)	Lakhs	2·25	2·65	3·20
10. Cotton Production	Lakh bales	70·00	80·37	99·30
11. Employment Potential ..	Thousands	9·9	10·7	17·7
12. Technical Personnel	„	—	13·7	20·8
13. Power Requirement	Million K.W.H.	—	5,300	6,500
14. Investment on Expansion ..	Rs. Crores	130-140	225	320

APPENDIX II

Statement Showing Production, Imports, Exports and Availability of Cotton Cloth from 1950 Onwards.

Year	Production	Imports	Exports	Availability	Per capita availability	
		Million yards			in yds.	in mtrs.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
				(2+3—4)		
1950	4,661	7	1,120	3,548	9·92	9·07
1951	5,184	5	823	4,366	12·01	10·98
1952	6,034	5	602	5,437	14·71	13·45
1953	6,420	4	657	5,767	15·33	14·02
1954	6,651	4	867	5,788	15·12	13·82
1955	6,865	7	753	6,119	15·68	14·34
1956	7,127	12	744	6,395	16·08	14·70
1957	7,298	11	877	6,432	15·85	14·49
1958	7,078	5	617	6,466	15·61	14·27
1959	7,159	6	851	6,350	14·69	13·43
1960	7,250	4	724	6,530	15·09	13·80
1961	7,736	2	599	7,139	16·13	14·75
1962	7,625	1	537	7,089	15·65	14·31
1963	7,993	1	580	7,414	16·00	14·63

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